UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

NOV 04 2016

Gardner Redevelopment Authority
Attn: Trevor Beauregard, Executive Director
115 Pleasant Street – Room 201
Gardner, Massachusetts 01440

Re: PCB Risk-Based Disposal Approval under 40 CFR § 761.61(c)
Former Garbose Metal Company Property
155 Mill Street, Gardner, Massachusetts
MassDEP RTN: 2-11321

Dear Mr. Beauregard:

This is in response to the Notification[1] by the Gardner Redevelopment Authority ("GRA") for approval of a PCB risk-based disposal plan under 40 CFR § 761.61(c) to address PCB-contaminated wastes at the former Garbose Metal Company Property located at 155 Mill Street ("the Site") in Gardner, Massachusetts. Specifically, PCB-contaminated upland soil, wetland soil/sediments and concrete floor slabs located at the property contain PCB concentrations that exceed the allowable PCB levels for unrestricted use under the federal PCB regulations at 40 CFR Part 761.

GRA's proposed plan under 40 CFR § 761.61(c) includes the following activities:

- ⇨ Demolish existing concrete structures. Demolish and relocate unpainted/unstained building concrete floors with PCB concentrations less than ("<") 10 parts per million ("ppm") into the Contaminated Soil Consolidation Area as shown on revised Figure 2 of the Notification;

- ⇨ Remove and dispose off-site the five (5) PCB-contaminated soil stockpiles with PCB concentrations greater than (">") 1 ppm but < 50 ppm;

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1 Information was submitted by Tighe & Bond on behalf of GRA to support a risk-based disposal approach for PCB remediation waste under 40 CFR § 761.61(c). Information was provided dated March 2015 (TSCA Notification and Phase IV Remedy Implementation Plan); January 5, 2016 (PCB Cleanup Plan Addendum No. 1); June 21, 2016 (email Response to EPA comments of June 9, 2016); September 12, 2016 (email PCB Cleanup Plan Addendum No. 1 as revised August 16, 2016 with signed certification); September 13, 2016 (email Response to EPA June 22, 2016 comments); October 19, 2016 (email contractor work plan); October 21, 2016 (email clarifications on existing stockpiles, sediment cleanup, and < 50 ppm PCB waste disposal); October 28, 2016 (emails Responses to EPA Comments of October 21, 2016 and revised contractor work plan); October 31, 2016 (email CWP Attachments); and, November 2, 2016 (email Response to EPA comment on CWP). These submissions will be referred to as the "Notification."

- ⇨ Excavate and dispose off-site, soil with greater than or equal to ("≥") 10 ppm PCBs and soil with metals greater than the Massachusetts Contingency Plan ("MCP") Method 3 Upper Concentrations Limits ("UCL"). In the event that funding does not provide for removal of all ≥ 10 ppm PCBs, contaminated soil with ≥ 25 ppm PCBs shall be excavated and disposed off-site;

- ⇨ Excavate PCB-contaminated sediments from Mill Chase Brook and the unnamed drainage swale and dispose off-site as a less than ("<") 50 ppm PCB waste in accordance with 40 CFR § 761.61(a)(5)(i)(B)(*2*)(*ii*);

- ⇨ Excavate and relocate PCB-contaminated soil with ≥ 1 ppm but < 10 ppm into the Contaminated Soil Consolidation Area as shown on Figure 2 of the January 5, 2016 PCB Cleanup Plan Addendum 1;

- ⇨ Stabilize the slopes adjacent to the on-site stream channels and re-establish vegetation to reduce erosion potential and to meet separate wetland permitting restoration requirements;

- ⇨ Install a temporary, 12-inch clean cover system over the Contaminated Soil Consolidation Area;

- ⇨ Dispose of PCB-contaminated soil with ≥ 10 ppm but < 50 ppm in accordance with 40 CFR § 761.61(a)(5)(i)(B)(*2*)(*ii*) and ≥ 50 ppm PCB-contaminated soil in accordance with 40 CFR § 761.61(a)(5)(i)(B)(*2*)(*iii*); and,

- ⇨ Place a deed notice in the form of an Activity and Use Limitation ("AUL") to establish use restrictions, to prohibit disturbances to and maintenance for the temporary clean cover system, and to detail any future soil handling practices and requirements at the Site.

The information provided meets the notification requirements under 40 CFR §§ 761.61(a)(3) and (c). Consolidation and disposal onsite of PCB-contaminated soil and concrete with < 10 ppm under a temporary clean cover will prevent direct exposure of PCB-contaminated soil and concrete to any Site users and will not pose an unreasonable risk of injury to health or the environment provided this temporary clean cover is maintained. EPA applies this no unreasonable risk standard in accordance with the PCB regulations at 40 CFR § 761.61(c), and the Toxic Substances Control Act, at 15 USC § 2605(e).

GRA may proceed with its project in accordance with 40 CFR § 761.61(c); its Notification; and, this Approval, subject to the conditions of Attachment 1. Under this Approval, EPA is reserving its right to require additional investigation or mitigation measures should it find that the implemented plan is not protective of public health and/or the environment.

This Approval does not release GRA from any applicable requirements of federal, state or local law, including the requirements related to cleanup and disposal of PCBs or other contaminants under the Massachusetts Department of Environmental Protection ("MassDEP") regulations, including any requirements related to groundwater monitoring.

EPA encourages the compliance with greener cleanup practices for all cleanup projects, and recommends adherence to the ASTM Standard Guide to Greener Cleanups E2893-16 (Guide) for work conducted under this Approval and the Notification. Greener cleanups is the practice of integrating options that minimize the environmental impacts of cleanup actions in order to incorporate practices that maximize environmental and human benefit. Please see Section 6 of the Guide for the Best Management Practices (BMP) Process published May 2016 (*see* www.astm.org/Standards/E2893.htm *for additional information*). EPA encourages you to review the Guide and implement any practices that are feasible. If implemented, the PCB Completion Report (see Attachment 1, Condition 31) should include a section on BMP Documentation, as described in Section 6.6.5 of the Guide.

Questions and correspondence regarding this Approval should be directed to:

Kimberly N. Tisa, PCB Coordinator (OSRR07-2)
United States Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1527 / Facsimile: (617) 918-0527

The obligations specified in Attachment 1 shall apply until such time as a redevelopment plan is identified for the property; a final, permanent compliant surface cap is constructed; and/or additional PCBs are removed to achieve the unrestricted use standard of less than or equal to ("≤") 1 ppm. These obligations include, but are not limited to: use (Conditions 18 through 20), establishment of the deed restriction (Condition 17), and the temporary surface cover monitoring and maintenance (Condition 21). Please be aware that upon EPA receipt and review of the submittals, EPA may request any additional information necessary to establish that the work has been completed in accordance with 40 CFR Part 761, the Notification, and this Approval.

Sincerely,

Bryan Olson, Director
Office of Site Remediation & Restoration

Attachment 1: PCB Approval Conditions
Attachment 2: Figure 1, Modified Proposed Excavation Plan
Attachment 3: Revised Figure 2, Proposed Consolidation Plan
Attachment 4: Revised Table 2, Summary of Proposed Excavations, Soil Management and Verification Sampling Programs

Cc: MassDEP CERO: RTN 2-11321
Todd Kirton, Tighe&Bond
Chris Lombard, EPA BF
File

ATTACHMENT 1

PCB RISK-BASED DISPOSAL APPROVAL CONDITIONS
FORMER GARBOSE METAL COMPANY PROPERTY
155 MILL STREET / GARDNER, MASSACHUSETTS

GENERAL CONDITIONS

1. This Approval is granted under the authority of Section 6(e) of the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2605(e), and the PCB regulations at 40 CFR Part 761, and applies solely to *PCB remediation waste* identified in the Notification[2] as shown on Figures 1 and 2 of the Notification (see Attachments 2 and 3), and hereinafter "the Site".

    a. In the event that Gardner Redevelopment Authority ("GRA") identifies other PCB-contaminated wastes (PCB waste not identified in the Notification) subject to cleanup and disposal under the PCB regulations, GRA will be required to notify EPA and clean up the PCB-contaminated wastes in accordance with 40 CFR Part 761.

    b. GRA shall submit a separate plan to address this other PCB contamination or GRA may propose a modification to the Notification to incorporate cleanup of the PCBs under this Approval in accordance with Condition 22.

2. This Approval shall expire 3 years from the date of signature, unless extended, renewed, suspended, modified, revoked, or terminated in accordance with the conditions stated herein.

3. Application for renewal or extension of this Approval shall be made in writing at least 180 days, but not more than 270 days, prior to the expiration date. Application for renewal must include information to demonstrate that the institutional and engineered controls (e.g., temporary surface covers) remain effective in mitigating risks from PCBs and that GRA (or a subsequent owner of the property subject to the terms of this Approval) has met and will continue to meet all conditions of this Approval. In reviewing the application for renewal, EPA will consider whether Site controls are effective, if additional measures are necessary to ensure no unreasonable risk of injury to health or the environment, and whether Approval conditions have been met. EPA may require the submission of additional information in connection with any renewal application.

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[2] Information was submitted by Tighe & Bond on behalf of GRA to support a risk-based disposal approach for PCB remediation waste under 40 CFR § 761.61(c). Information was provided dated March 2015 (TSCA Notification and Phase IV Remedy Implementation Plan); January 5, 2016 (PCB Cleanup Plan Addendum No. 1); June 21, 2016 (email Response to EPA comments of June 9, 2016); September 12, 2016 (email PCB Cleanup Plan Addendum No. 1 as revised August 16, 2016 with signed certification); September 13, 2016 (email Response to EPA June 22, 2016 comments); October 19, 2016 (email contractor work plan); October 28, 2016 (email Responses to EPA Comments of October 21, 2016 and revised Contractor Work Plan); October 31, 2016 (email CWP Attachments); and, November 2, 2016 (email Response to EPA comment on CWP). These submissions will be referred to as the "Notification."

4. GRA shall conduct on-site activities in accordance with the conditions of this Approval and with the Notification.

5. In the event that the activities described in the Notification differ from the conditions specified in this Approval, the conditions of this Approval shall govern.

6. The terms and abbreviations used herein shall have the meanings as defined in 40 CFR § 761.3 unless otherwise defined within this Approval.

7. GRA shall comply with all applicable federal, state and local regulations in the storage, handling, and disposal of all PCB wastes, including PCBs, PCB Items and decontamination wastes generated under this Approval. In the event of a new spill during response actions, GRA shall contact EPA within twenty-four (24) hours for direction on sampling and cleanup requirements.

8. GRA is responsible for the actions of all officers, employees, agents, contractors, subcontractors, and others who are involved in activities conducted under this Approval. If at any time GRA has or receives information indicating that GRA or any other person has failed, or may have failed, to comply with any provision of this Approval, it must report the information to EPA in writing within twenty-four (24) hours of having or receiving the information.

9. This Approval does not constitute a determination by EPA that the transporters or disposal facilities selected by GRA are authorized to conduct the activities set forth in the Notification. GRA is responsible for ensuring that its selected transporters and disposal facilities are authorized to conduct these activities in accordance with all applicable federal, state and local statutes and regulations.

10. This Approval does not: 1) waive or compromise EPA's enforcement and regulatory authority; 2) release GRA from compliance with any applicable requirements of TSCA or other federal, state or local law; or 3) release GRA from liability for, or otherwise resolve, any violations of TSCA or other federal, state or local law.

NOTIFICATION AND CERTIFICATION CONDITIONS

11. This Approval may be revoked if the EPA does not receive written notification from GRA of its acceptance of the conditions of this Approval within ten 10 business days of receipt.

12. GRA shall notify EPA in writing of the scheduled date of commencement of on-site activities at least one (1) business day prior to conducting any work under this Approval.

13. Prior to initiating onsite work under this Approval, GRA shall submit the following information for EPA review and/or approval:

    a. a certification signed by its selected contractor, stating that the contractor(s) has read and understands the Notification, and agrees to abide by the conditions specified in this Approval; and,

    b. a certification signed by the selected analytical laboratory, stating that the laboratory has read and understands the analytical and quality assurance requirements specified in the Notification and in this Approval.

REMEDIAL AND DISPOSAL CONDITIONS

14. The cleanup level for *PCB remediation waste* (e.g., upland soil, wetland soil/sediments, etc) shall be as described in the Notification (see Attachments 2 through 4).

    a. Soil and sediment samples shall be collected on a bulk basis (i.e., mg/Kg) and in accordance with the frequencies and procedures detailed in the Notification (see Attachment 4). Samples shall be collected from both excavation bottoms and sidewalls.

    b. Chemical extraction for PCBs shall be conducted using Methods 3500B/3540C of SW-846 for solid matrices and Method 3500B/3510C of SW-846 for aqueous matrices; and, chemical analysis for PCBs shall be conducted using Method 8082 of SW-846, unless another extraction or analytical method(s) is validated according to Subpart Q.

15. To the maximum extent practical, engineering controls shall be utilized to minimize the potential for PCB releases during the cleanup. In addition, to the maximum extent possible, disposable equipment and materials, including PPE, will be used to reduce the amount of decontamination necessary.

16. PCB waste (at any concentration) generated as a result of the activities described in the Notification, excluding any decontaminated materials, shall be marked in accordance with § 761.40; stored in a manner prescribed in § 761.65; and, disposed of in accordance with 40 CFR § 761.61, unless otherwise specified below:

    a. Decontamination wastes and residues shall be disposed of in accordance with 40 CFR § 761.79(g)(6).

    b. Moveable equipment, tools, and sampling equipment shall be decontaminated in accordance with either 40 CFR § 761.79(b)(3)(i)(A), § 761.79(b)(3)(ii)(A), or § 761.79(c)(2).

c. PCB-contaminated water generated during decontamination or dewatering shall be decontaminated in accordance with 40 CFR § 761.79(b)(1) or disposed of under 40 CFR § 761.60.

DEED RESTRICTION AND USE CONDITIONS

17. Within sixty (60) days of completing the activities described in the Notification and authorized under this Approval, GRA shall submit for EPA review and approval, a draft deed restriction for the Site, which may be in the form of an Activity and Use Limitation ("AUL"). The deed restriction shall include: a description of the extent and levels of contamination at the Site following remediation; a description of the actions taken at the Site; a description of the use restrictions for the Site; and the monitoring and maintenance requirements for the temporary cap on the Site, which may be addressed by the maintenance and monitoring plan ("MMP", see condition 21). Within 10 business days of receipt of EPA's approval of the draft deed restriction, GRA shall record the deed restriction. A copy of this Approval shall be attached to the recorded deed restriction.

SALE, LEASE OR TRANSFER CONDITIONS

18. GRA shall notify the EPA of the sale, lease or transfer of any real estate interest in the Site that has an effect of allocating or sharing any responsibility for complying with this Approval to or with a different person. Such notice shall be in writing no later than sixty (60) days prior to such action. This notification shall include the name, address, and telephone number of the new entity acquiring such an interest in the Site. In the event that the GRA sells, leases, or transfers any such real estate interest, GRA shall continue to be bound by all the terms and conditions of this Approval, unless EPA approves the allocation of some or all of this Approval's responsibilities to the new owner(s), lessee or transferee. The notification procedures are as follows:

a. The new owner(s), lessee or transferee must request, in writing, that the EPA allocate some or all obligations and responsibilities under the Approval to the new owner(s), lessee or transferee;

b. The EPA reviews the request, and determines whether to allocate some or all of the obligations and responsibilities under the Approval to the new owner(s), lessee, or transferee; and,

c. The new owner(s), lessee or transferee provides written notification to the EPA of its acceptance of and intention to comply with the terms and conditions of the Approval or new approval, should EPA deem a new approval is necessary. The Approval or new approval may be withdrawn if the EPA does not receive written notification from the new owner(s), lessee or transferee of its acceptance of, and

intention to comply with, the terms and conditions of the Approval or new approval within thirty (30) days of its receipt of the Approval or the new approval. Under such circumstances, all terms and conditions of this Approval will continue to be binding on the Parties.

19. In the event that the sale, lease or transfer of a real estate interest in the Site will involve or result in a change in the use of the Site, EPA may revoke, suspend, and/or modify this Approval or the new approval if it finds, due to the change in use, that this PCB risk-based disposal action will not be protective of health or the environment. The owner shall record any amendment to the deed restriction, resulting from any approved modification(s), within sixty (60) days of such change(s).

20. In any sale, lease or transfer of a real estate interest in the Site, GRA shall retain sufficient access rights to enable it to continue to meet its obligations under this Approval, except as provided above.

INSPECTION, MODIFICATION AND REVOCATION CONDITIONS

21. Within sixty (60) days of completion of the work authorized under this Approval, GRA shall submit for EPA's review and approval, a detailed monitoring and maintenance plan ("MMP") for the temporary clean surface covers ("cap"). GRA shall incorporate any changes to the MMP required by EPA.

    a. The MMP shall include: a description of the activities that will be conducted, including inspection criteria, frequency, and routine maintenance activities; sampling protocols, sampling frequency, and analytical criteria, as applicable; and reporting requirements.

    b. The MMP shall include a communications component which details how the maintenance and monitoring results will be communicated to interested stakeholders.

    c. The MMP also shall include a worker training component for maintenance workers or for any person that will be conducting work that could impact the temporary cap.

    d. GRA shall submit the results of the monitoring and maintenance activities to EPA. Based on its review of the results, EPA may determine that modification to the MMP is necessary in order to maintain, monitor and/or evaluate the effectiveness of the temporary cap.

    e. Activities required under the MMP shall be conducted until such time that EPA determines, in writing, that such activities are no longer necessary.

22. Any modification(s) in the plan, specifications, or information submitted by GRA, contained in the Notification, and forming the basis upon which this Approval has been issued, must receive prior written approval from the EPA. GRA shall inform the EPA of any modification, in writing, at least ten (10) days prior to such change. No action may be taken to implement any such modification unless the EPA has approved of the modification, in writing. The EPA may request additional information in order to determine whether to approve the modification.

23. If such modification involves a change in the use of the Site (e.g., redevelopment), which results in exposures not considered in the Notification, the EPA may revoke, suspend, and/or modify this Approval upon finding that this risk-based disposal action may pose an unreasonable risk of injury to health or the environment due to the change in use. EPA may take similar action if the EPA does not receive requested information needed from GRA to make a determination regarding potential risk.

24. GRA shall record any amendment to the deed restriction, resulting from any approved change or modification(s), within sixty (60) days of such change(s). (See Condition 17).

25. Any departure from the conditions of this Approval without prior, written authorization from the EPA may result in the revocation, suspension and/or modification of the Approval, in addition to any other legal or equitable relief or remedy the EPA may choose to pursue.

26. Any misrepresentation or omission of any material fact in the Notification or in any future records or reports may result in the EPA's revocation, suspension and/or modification of the Approval, in addition to any other legal or equitable relief or remedy the EPA may choose to pursue.

27. Approval for these activities may be revoked, modified or otherwise altered if: EPA finds a violation of the conditions of this Approval or of 40 CFR Part 761, including EPA's PCB Spill Cleanup Policy, or other applicable rules and regulations; EPA finds that the PCBs remaining at the Site present an unreasonable risk of injury to public health or the environment; EPA finds that the institutional and engineered controls are not effective in preventing PCB exposure; EPA finds that there is migration of PCBs from the Site; or EPA finds that changes are necessary to comply with new rules, standards, or guidance for such approvals. GRA may apply for appropriate modifications in the event new rules, standards, or guidance come into effect.

28. GRA shall allow any authorized representative of the Administrator of the EPA to inspect the Site and to inspect records and take samples as may be necessary to determine compliance with the PCB regulations and this Approval. Any refusal by GRA to allow such an inspection (as authorized by Section 11 of TSCA) shall be grounds for revocation of this Approval.

RECORDKEEPING AND REPORTING CONDITIONS

29. GRA shall prepare and maintain all records and documents required by 40 CFR Part 761, including, but not limited to, the records required by Subparts J and K. GRA shall maintain a written record of the cleanup and the analytical sampling for activities conducted under this Approval at the facility. All records shall be made available for inspection by authorized representatives of the EPA, until such time as EPA approves in writing a request for an alternative disposition of such records.

30. As required under Condition 21 of this Approval, GRA shall submit the results of the monitoring and maintenance activities to EPA as specified in the final MMP to be approved by EPA.

31. GRA shall submit to EPA a Final Completion Report ("Report") in both hard and electronic formats (e.g., CD-ROM) within 120 days of completion of the activities described under this Approval. At a minimum, this Report shall include:

    a. a discussion of the project activities with photo-documentation and Greener Cleanups BMPs, if implemented; documentation of the temporary cap construction; characterization and verification sampling analytical results with figures showing sampling locations, as applicable; copies of the accompanying analytical chains of custody; field and laboratory quality control/quality assurance checks; an estimate of the quantity of PCBs removed and disposed off-site; copies of manifests and/or bills of lading or equivalent; and, copies of certificates of disposal or similar certifications issued by the disposer;

    b. a certification signed by a GRA official verifying that the authorized activities have been implemented in accordance with this Approval and the Notification; and,

    c. a signed certification as required under 40 CFR § 761.61(a)(8)(i)(B) that the deed restriction (e.g., Activity and Use Limitation or "AUL") has been recorded with a copy of the executed deed restriction.

32. Required submittals shall be mailed to:

    Kimberly N. Tisa, PCB Coordinator (Mail Code: OSRR07-2)
    United States Environmental Protection Agency
    5 Post Office Square, Suite 100
    Boston, Massachusetts 02109-3912

33. No record, report or communication required under this Approval shall qualify as a self-audit or voluntary disclosure under EPA audit, self disclosure or penalty policies.

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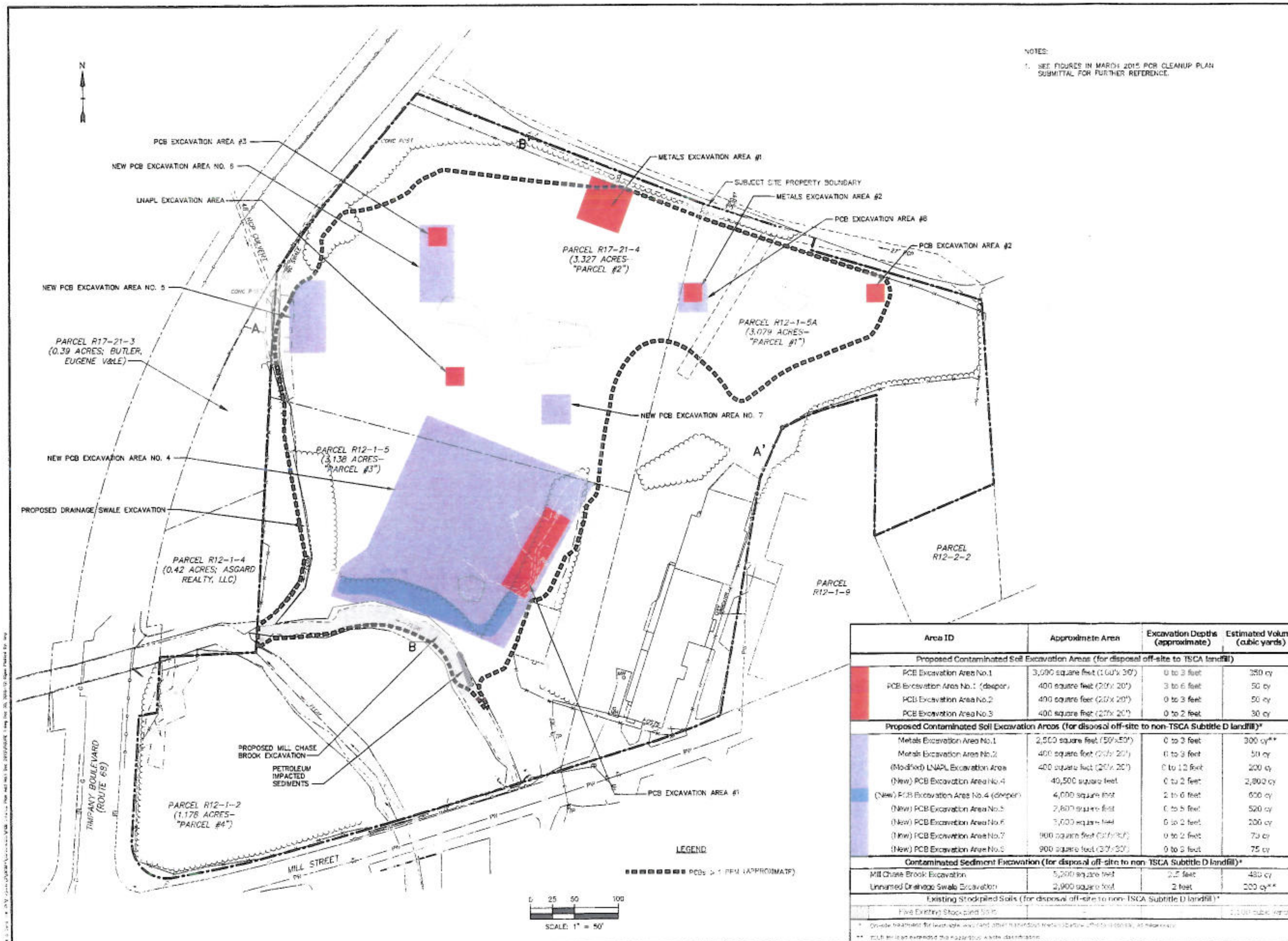
END OF ATTACHMENT 1

Attachment 2.



Area ID	Approximate Area	Excavation Depths (approximate)	Estimated Volume (cubic yards)
Proposed Contaminated Soil Excavation Areas (for disposal off-site to TSCA landfill)			
PCB Excavation Area No.1	3,000 square feet (100'x 30')	0 to 3 feet	350 cy
PCB Excavation Area No.1 (deeper)	400 square feet (20'x 20')	3 to 6 feet	50 cy
PCB Excavation Area No.2	400 square feet (20'x 20')	0 to 3 feet	50 cy
PCB Excavation Area No.3	400 square feet (20'x 20')	0 to 2 feet	30 cy
Proposed Contaminated Soil Excavation Areas (for disposal off-site to non-TSCA Subtitle D landfill)*			
Metals Excavation Area No.1	2,500 square feet (50'x50')	0 to 3 feet	300 cy**
Metals Excavation Area No.2	400 square feet (20'x 20')	0 to 3 feet	50 cy
(Modified) LNAPL Excavation Area	400 square feet (20'x 20')	0 to 12 feet	200 cy
(New) PCB Excavation Area No.4	40,500 square feet	0 to 2 feet	2,800 cy
(New) PCB Excavation Area No.4 (deeper)	4,000 square feet	2 to 6 feet	600 cy
(New) PCB Excavation Area No.5	2,800 square feet	0 to 5 feet	520 cy
(New) PCB Excavation Area No.6	3,000 square feet	0 to 2 feet	200 cy
(New) PCB Excavation Area No.7	900 square feet (30'x30')	0 to 2 feet	75 cy
(New) PCB Excavation Area No.8	900 square feet (30'x30')	0 to 3 feet	75 cy
Contaminated Sediment Excavation (for disposal off-site to non-TSCA Subtitle D landfill)*			
Mill Chase Brook Excavation	5,200 square feet	2.5 feet	480 cy
Unnamed Drainage Swale Excavation	2,900 square feet	2 feet	200 cy**
Existing Stockpiled Soils (for disposal off-site to non-TSCA Subtitle D landfill)*			
Five Existing Stockpiled Soils	-	-	[illegible] cubic yards

* On-site treatment for leachable ... and other hazardous ... as necessary

** TCLP ... exceeded the hazardous waste classification

Tighe&Bond
Consulting Engineers
www.tighebond.com

PRELIMINARY
NOT FOR CONSTRUCTION

City of Gardner

Former Garbose Metal Site
155 Mill Street

Gardner, Massachusetts

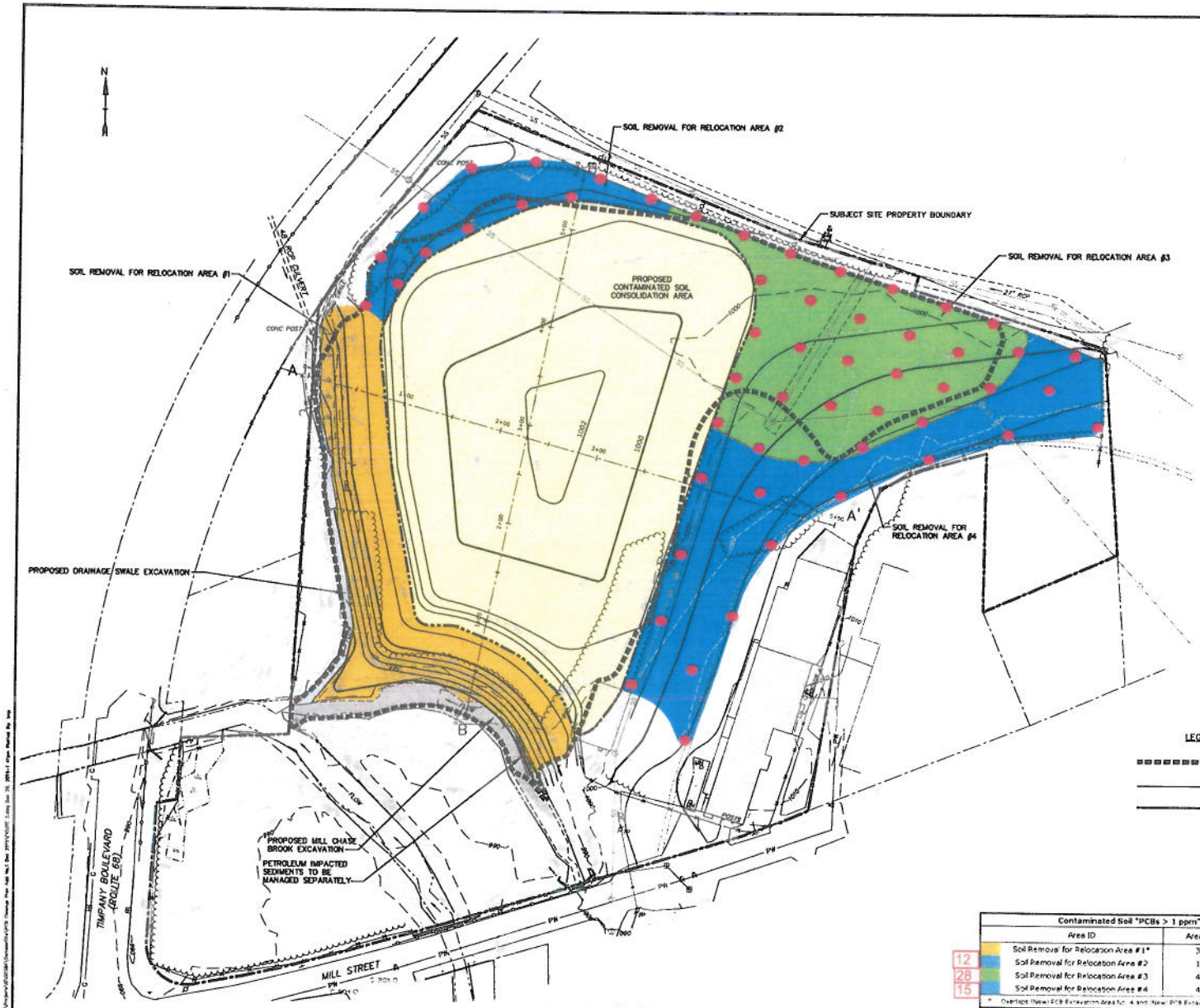
VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 — 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PROJECT NO.	G0506/GarboseSite
FILE	FIGURE 1.dwg
DRAWN BY	TMP
CHECKED	TDK, MPC
APPROVED BY	MJR, DPR

MODIFIED PROPOSED EXCAVATION PLAN

SCALE: 1"=50'

FIGURE 1



Contaminated Soil "PCBs > 1 ppm" Removal Areas (for Consolidation On-Site)			
	Area ID	Area Size (approximate)	Total Excavation Depth's Range (Average)
12	Soil Removal for Relocation Area #1*	36,400 square feet	1 to 6 feet (3.5 feet)
	Soil Removal for Relocation Area #2	14,500 square feet	1 to 2 feet (1.5 feet)
28	Soil Removal for Relocation Area #3	42,000 square feet	2 to 3 feet (2.5 feet)
15	Soil Removal for Relocation Area #4	42,500 square feet	1 to 2 feet (1.5 feet)

* Overlaps (New) ECB Excavation Area No. 4 and (New) PCB Excavation Area No. 5

Contaminated Soil Consolidation Area	
Description	Area Size (Approximate)
Final Contaminated Soil Consolidation Area	135,000 square feet

Tighe&Bond
Consulting Engineers
www.tighebond.com

PRELIMINARY
NOT FOR CONSTRUCTION

City of Gardner

Former Garbose Metal Site
155 Mill Street

Gardner, Massachusetts

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

Mark	Date	Description
PROJECT NO.		00384GarboseSite
FILE		FIGURE 2.dwg
DRAWN BY		TMP
CHECKED		TDK, MPC
APPROVED BY		MJR, DPR

PROPOSED CONSOLIDATION PLAN

SCALE: 1"=50'

Revised FIGURE 2

Attachment 3.

REVISED TABLE 2 (October 26, 2016)

Summary of Proposed Excavations, Soil Management, and Verification Sampling Programs[1]
PCB Cleanup Plan Addendum No. 1 Submittal
Former Garbose Site - 155 Mill Street
Gardner, MA

Proposed Excavation Area	Remedial Goal	Parcel No.	Area Description	Estimated volume of soils to be generated (conservative)	Management of Soils	Description of Post-Removal Verification Sampling Program	Total # of Samples for PCB Analysis	Other Analyses
PCB Excavation Area No.1	Reduce PCBs <50 ppm	~~Parcel #2~~ Parcel #3	Excavate over approximate 100 foot by 30 foot area to a depth of three feet BSG	400 cubic yards	To be disposed off-site at a TSCA chemical waste landfill per 40 CFR 761.75	Collect ~~six~~ 12 samples from the sidewalls (sample collected from 1 to 2 feet) and ~~two~~ four (4) samples from the base of where excavation is scheduled for 0 to 3-feet BSG for PCB analysis. ~~This equates to one sample approximately every 50 feet (or less) across the 30 foot by 100 foot excavation.~~	8-16	-
			Further excavation will occur from 3 to 6 feet BSG across an approximate 20 foot by 20 foot area			Collect one sample from each sidewall (sample collected from 4 to 5 feet) and one sample from the base of the deeper portion where excavation is scheduled from 3 to 6-feet BSG for PCB analysis. This will equate to one sample approximately every 20 feet across this 20 foot by 20 foot excavation	5	-
PCB Excavation Area No.2		Parcel #1	Excavate over approximate 20 foot by 20 foot area to a depth of three feet BSG	50 cubic yards		Collect one soil sample from the base of this excavation and one sample from each of the four sidewalls (0 to 1 foot) for PCB analysis	5	-
PCB Excavation Area No.3		Parcel #2	Excavate over approximate 20 foot by 20 foot area to a depth of two feet BSG	30 cubic yards		Collect one soil sample from the base of this excavation and one sample from each of the four sidewalls (0 to 1 foot) for PCB analysis	5	-
Metals Excavation Area No.1	Reduce metals to below Method 3 UCLs	Parcel #1	Excavate over approximate 50 foot by 50 foot area to a depth of three feet BSG	300 cubic yards	To be disposed off-site at a non-TSCA Subtitle D landfill per 40 CFR 761.61(a)(5)(v)(A)(1)	Collect composite samples from each sidewall and from the base. Each of these five samples will be submitted for lead and cadmium analysis	-	5 for lead and cadmium
Metals Excavation Area No.2		Parcel #2	Excavate over approximate 20 foot by 20 foot area to a depth of three feet BSG	50 cubic yards		Collect two composite sidewall samples and from the base. Each of these three samples will be submitted for lead analysis	-	3 for lead
(Modified) LNAPL Area Excavation*	Remove petroleum-impacted soils that may serve as source of LNAPL	Parcel #2	Excavate over an approximate 20 foot by 20 foot area from 0 to 12 BSG*	200 cubic yards*	To be disposed off-site at a non-TSCA Subtitle D landfill per 40 CFR 761.61(a)(5)(v)(A)(1)	(no verification sampling is proposed / warranted)	-	-
Existing Stockpiles*	-	Parcels #1, #2 and #3	"Excavate" 5 existing stockpiles with PCBs between 1 and 50 ppm for off-site disposal*	1,100 cubic yards *	To be disposed off-site at a non-TSCA Subtitle D landfill per 40 CFR 761.61(a)(5)(v)(A)(1)*	For the larger soil stockpile area on the central portion of the site (on Parcel #2), collect two samples for PCB analysis. No verification program is proposed for the other four stockpiles, other than if located within a proposed excavation area.	-	-
Mill Chase Brook Excavation	For sediments, non-detect levels for PCBs. For other site COCs, the ecological risk-based cleanup goals established as part of the earlier Stage II will be used.	Parcels #2 and #3	Excavate 5,200 square feet to average depth of 2.5 feet	480 cubic yards	To be disposed off-site at a non-TSCA Subtitle D landfill per 40 CFR 761.61(a)(5)(v)(A)(1)*	PCB verification sampling be conducted through the collection of samples from the sidewalls of the channel banks and at the center of the excavation (i.e., three locations perpendicular to the stream channel will be collected). The samples will be collected to a depth of three inches approximately every 50 feet along the proposed Mill Chase Brook excavation, for a total of 18 samples.	18	• 4 samples for arsenic, cadmium, chromium (total), copper, lead, nickel, and zinc analysis; • 5 samples for EPH analysis (see cleanup plan for sample location description)
Unnamed Drainage Swale Excavation		Parcel #3	Excavate along 380-foot length of the swale to average depth of two feet BSG	200 cubic yards		PCB verification sampling be conducted in a similar manner (i.e., three locations perpendicular to the channel). The samples will be collected every 50 feet, for a total of 24 samples.	24	• 6 samples for arsenic, cadmium, chromium (total), copper, lead, nickel, and zinc analysis

Attachment H, P1/2

REVISED TABLE 2 (October 26, 2016)

Summary of Proposed Excavations, Soil Management, and Verification Sampling Programs[1]
PCB Cleanup Plan Addendum No. 1 Submittal
Former Garbose Site - 155 Mill Street
Gardner, MA

Proposed Excavation Area	Remedial Goal	Parcel No.	Area Description	Estimated volume of soils to be generated (conservative)	Management of Soils	Description of Post-Removal Verification Sampling Program	Total # of Samples for PCB Analysis	Other Analyses
(New) PCB Excavation Area No.4*	Reduce PCBs <10 ppm	Parcel #3	Excavate soils over an approximate 40,500 square foot area to a depth of two feet BSG*	2,800*	To be disposed off-site at a non-TSCA Subtitle D landfill per 40 CFR 761.61(a)(5)(v)(A)(1)*	Collect samples for PCB analysis in a general 50-foot grid pattern across the base of the excavation scheduled to occur to two feet BSG, and across the base of the excavation scheduled to occur from 2 to 6 feet BSG. For sidewalls, collect samples vertically every two feet.*	40*	-
			Excavate soils over an approximate 4,000 square foot area from two to six feet BSG*	600*				-
(New) PCB Excavation Area No.5*		Parcel #2	Excavate soils over an approximate 2,800 square foot area to a depth of five feet BSG*	520*		Collect 12 samples from the sidewalls (vertically every two feet in the top four feet) and four samples from across the base of this excavation for PCB analysis.*	16*	-
(New) PCB Excavation Area No.6*		Parcel #2	Excavate soils over an approximate 3,000 square foot area to a depth of two feet BSG*	200*		Collect six samples from the sidewalls and two samples from the base of this excavation for PCB analysis.*	8*	-
(New) PCB Excavation Area No.7*		Parcel #2	Excavate soils over an approximate 900 square foot area to a depth of two feet BSG*	70*		Collect one sample from each of the four sidewalls (0 to 2 feet) and two soil samples from the base of this excavation for PCB analysis.*	6*	-
(New) PCB Excavation Area No.8*		Parcel #3	Excavate soils over an approximate 900 square foot area to a depth of two feet BSG*	75*		Collect six samples from the sidewalls (0 to 2 feet) and four samples from across the base of this excavation for PCB analysis.*	10*	-
Soil Removal for Relocation Area #1	Reduce PCBs to <1 ppm; reduce EPCs for other COCs to background (or below Method 1, S-1 standards)	Parcels #2 and #3	Excavate soils for relocation across 36,400 square foot area, with average excavation depth of 3.5 feet BSG (range between 1 and 6 feet BSG)	3,300 cubic yards*	To be relocated within the Contaminated Soil Consolidation Area	Collect samples for PCB analysis in a general 50-foot grid pattern across this area, with samples collected along the lower/base of the slope (i.e., adjacent to the stream channels), as well as near the top of the slope (i.e., adjacent to the Contaminated Soil Consolidation Area).	30 (estimated)	• 20 soil samples for lead analysis • 10 soil samples for arsenic, cadmium, and nickel analysis • 5 soil samples for antimony, barium, chromium (total), hexavalent chromium, and zinc analysis • 5 soil for dioxin analysis • 5 soil samples for EPH analysis
Soil Removal for Relocation Area #2		Parcel #2	Excavate soils for relocation across 14,500 square foot area, with average excavation depth of 1.5 feet BSG (range between 1 and 2 feet BSG)	800 cubic yards		Collect six (6) soil samples for PCBs analysis from within the portion of this area that had PCBs>1 ppm. Also collect ~~two~~ six (6) additional samples from further outside this area (i.e., further to the northwest), nearer to the property boundary and Timpany Boulevard.	~~8~~ 12 (estimated)	
Soil Removal for Relocation Area #3		Parcels #1 and #2	Excavate soils for relocation across 42,000 square foot area, with average excavation depth of 2.5 feet BSG (range between 2 and 3 feet BSG)	3,600 cubic yards*		Collect soil samples for PCBs analysis in an approximate 50-foot grid pattern across this area. Based on this program, we anticipate that ~~35~~ 28 soil samples will be collected from this area~~, or approximately 1 sample every 1,200 square feet across this approximate 42,000 square foot area~~.	~~35~~ 28 (estimated)	
Soil Removal for Relocation Area #4		Parcel #1	Excavate soils for relocation across 42,000 square foot area, with average excavation depth of 1.5 feet BSG (range between 1 and 2 feet BSG)	2,360 cubic yards		Collect soil samples approximately every 100 feet over the length of this area (generally off-set from the samples collected from the abutting Soil Removal for Relocation Area #4)~~, which equates to approximately 1 sample every 3,500 square feet~~. Collect three additional samples from outside this proposed soil removal area, in areas generally beneath where the warehouse and remaining foundation slab area were located (scheduled for demolition and removal).	15 (estimated)	

Notes:

(1) Descriptions summarized herein are consistent with our March 2015 PCB Cleanup Plan submittal, with some modifications/additions under this PCB Cleanup Plan Addendum No. 1 submittal.

* represents modified and/or new items under this PCB Cleanup Plan Addendum No. 1 submittal.

BSG - indicates below surface grade.

Attachment H. P2/2